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**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/602,938
	Filing Date	June 24, 2003
	First Named Inventor	Thompson M. Sloane, et al.
	Art Unit	3748
	Examiner Name	Zelalem Eshete
Total Number of Pages in This Submission	Attorney Docket Number	GP-303216 (8540R-000038)

**ENCLOSURES (check all that apply)**

<input type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment / Reply  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Response to Missing Parts/ Incomplete Application  <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert to a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Technology Center (TC)  <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input checked="" type="checkbox"/> Appeal Communication to TC (Reply Filed Under 37 C.F.R. 1.193(b)(1) – in triplicate)  <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):  <b>return receipt postcard</b>		
<table border="1"><tr><td>Remarks</td><td>The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 07-0960. A duplicate copy of this sheet is enclosed.</td></tr></table>			Remarks	The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 07-0960. A duplicate copy of this sheet is enclosed.
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**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name	Christopher A. Eusebi	Reg. No.	44,672
Signature					
Date	September 23, 2005				

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9-26-05

AP/IFR

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application No.: 10/602,938  
Filing Date: June 24, 2003  
Applicant: Thompson M. Sloane, et al.  
Group Art Unit: 3748  
Examiner: Zelalem Eshete  
Title: ACETYLENE-BASED ADDITION FOR  
HOMOGENEOUS-CHARGE COMPRESSION IGNITION  
(HCCI) ENGINE OPERATION  
Attorney Docket: GP-303216 (8540R-000038)

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Mail Stop Appeal Brief - Patents  
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**REPLY FILED UNDER 37 C.F.R. 1.193(b)(1)**

## REMARKS

Throughout the prosecution of the instant application, the Examiner has failed to provide any motivation to combine the references. As such, the Examiner has failed to meet the burden to create a prima facie case of obviousness, as the Examiner must provide a motivation to combine the references to teach the Applicants' claimed invention.

In each of the Office Actions, as well as the Examiner's reply, the Examiner is specifically silent as to the motivation to combine the references. The only mention of motivation listed within the Office Actions is under part five of the Advisory Action which states "Gonzales teaches the motivation for implementing concurrent or staged injections depending on application parameters (see column 2, line 67 to column 3, line 3)." Applicants note Gonzales does not teach concurrently injecting both components into the cylinder. This motivation is not sufficient and further fails to describe or detail what specifically the motivation to combine the references would be. In this regard, the motivation must be a motivation to combine the references, not the motivation to practice any particular reference.

To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or implicitly suggest the claimed combination or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings in the references. See *Ex parte Clapp*, 227 USPQ 972, 973 (bd. pat app. and inter. 1985). The Examiner has not shown that the claim limitations are either expressly or implicitly suggested in the references. Further, the Examiner has not presented a

convincing line of reasoning as to why an artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

Applicants note that the Examiner has not cited anything within the references to provide the necessary motivation to combine the references. While Applicants acknowledge that the motivation to combine can be found implicit to the knowledge of one skilled in the art, Applicants respectfully assert that the Office Actions do not explain what specific understanding or technology principle within the knowledge of one of ordinary skill in the art would have suggested the combination. "The Examiner must shown reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention would select the elements from the cited prior art references for combination in the manner claimed." *In re Rouffett*, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998). Failure to show the specific understanding or principle within the knowledge of a skilled artisan leads to an inference that the Examiner's utilizing hindsight construction. See *Id* at 1458.

To this end, the Examiner must show the reasons why a skilled artisan confronted with designing an engine would select the elements from the cited reference to show a system which utilizes concurrently initiating injection of a fuel and an acetylene-based component, mixing air and the fuel and acetylene-based component to form a combustion mixture and compressing the combustion mixture to induce auto ignition of the combustion mixture. Specifically, the Examiner fails to disclose why one skilled in the art would be motivated to combine the references, which either specifically teach introducing separate fuel components separately into a cylinder at different times, or teach the use of a single component fuel.

The Examiner has further failed to show the reasons why a skilled artisan, when confronted with the same problems as the inventor, would select the elements from Dahung, Bundrick, and Gonzalez for combination in the matter cited. Dahung fails to teach or suggest concurrently initiating injection of a fuel and an acetylene-based component into the cylinder, mixing the mixture with air to form a combustion mixture and then compressing the combustion mixture to induce auto-ignition of the combustion mixture. As detailed in Applicants' Reply Brief, neither the Bundrick or Gonzalez references teach these limitations.

As specified in Applicants' Brief and throughout the prosecution of the application, the Examiner did not support the combinations by identifying specific teachings, suggestions or motivations found in the references, relying simply that all of the references come from the same broad category of art, and that the unsupported general knowledge of one skilled in the art can be relied upon to combine the references. The Examiner essentially asserts that it would be obvious for skilled artisans to try the features of one device in another similar device. This "obvious to try theory" has been expressly rejected in *In re Fine* at 1598.

In view of the foregoing, the combinations of references are improper and otherwise fail to teach or suggest all of the elements of the claims as set forth. Therefore, Applicants respectfully request that this Board overturn the rejections of the claims in the instant application.

Respectfully submitted,

Dated: Sept 23-2005

By:   
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